## THE TRANSIT OF VENUS.

The Achievements of the American Scientific Army.

Official Reports of the Observers.

The Plans of the Transit Commission a Brilliant Success.

TRIUMPHS OF AMERICAN INGENUITY

The Successful Labors of the Expeditions in China and New Zealand.

Their Importance in the Great Problem.

The story of the brilliant achievements of the American expeditions despatched to the Eastern Hemisphere of the earth to observe the transit of Vehus across the sun's disk have already been minutely detailed in the dERALD. But the scientific records of the latitude and longitude observations of the astronomers, the circumstances under which the phenomenon was chroncled, and the other details so anxiously awaited by the calculators and students throughout the orld, have been reserved for embodiment in formal and official reports to the commission at Washington, and these are now and for the first time made public through the columns of this paper. Considering that the work has been performed under more than ordinary difficulties, and that their abors will constitute bases of calculation in foreign observatories, it is a matter for congratulation that the history of them can be given to the world at this comparatively early date. Appended will be found the interesting statements of Prolessors Watson and Peters, whose positions and observations in China and New Zealand respeclively were among the most important of those taken by the astronomers. The reports of other thief astronomers we hope to be able to lay before our readers almost immediately, excepting, perhaps, those on their way from the distant regions of Visdivostok (Eastern Siberia) and Kerguelen

OUR ASTRONOMERS IN CHINA. THE SUCCESS ACHIEVED AT PEKIN PORTRAYED BY PROFESSOR J. C. WATSON.

SHANGHAI, Jan. 13, 1875. MY DEAR PROFESSOR-I received your letter of the 22d October the night before we left Pekin and I send you this by the first mail which leaves since our arrival here in Spanghal. I have written to-day to Admiral Davis, stating fully our operations since I last wrote him, and stating also what I had done in relation to the return of the party and instruments to the United States. I will therefore advise you more fully in regard to our observations. For the determination of our atitude we have about 140 pairs observed and for our longitude we have forty-four occultations, many of them observed by three observers, and we have in all cases complete time determinations on the same evening. We have, I think, nearly, if not more than 1,000 transits of stars for time and position of instru-ments. We have almost daily determinations of the position of the photographic telescope. We tave numerous measures of distance between plateholder and objective; photographs of reversed lines of platcholder, &c. We have also made an accurate geodetic connection between our station and the French and Russian. We have also the magnetic and other observations provided for. I can think of nothing which was to be done or ought to have been done which has not been well done.

In regard to occultations, I computed all those in the lists of occultations whose limits included our latitude. In the case of the transit observations I have not been able to make the reductions for two reasons. First, the amount of material accumulated: second, the peculiarity of the instrament, which requires much more than ordinary labor of reduction. I have made prelimipary reduction of the observations, so as to keep the run of the clocks and chronometers, and to know the errors of the instrument; but I have been obliged to defer the complete reduction of all the observations until my return to the United States. As I participated personally in about them I can give them thorough treatment, and upon my return in September or October nex-I will complete the reductions and put all in complete form for publication, which will, I trust, be

THE DIFFICULTIES BEGUN. In regard to the peculiarities of our transit instrument I ought to write you now. Upon reducing my first observations I found great discrepancies in the value of the collimation lound from reversal upon different stars, and I was immediately convinced that the prism must be loose in its cell. Professor Young suggested also that there might be some flexure of the axis. collimation carefully and repeatedly and also the inequality of the pivots. Then I reversed the instrament upon stars near the zenith, so as to avoid the effect of azimuth errors, and I found that what I enspected did actually exist. But since the error of the prism might act in two ways-viz., if loose in its cell it would simply change the position of its face so as to introduce an error, precisely the same as that of an inequality of the pivots, corresponding in amount: or, if held tighter at one corner, it would by its weight change the place of its face in different positions of the instrument, introducing a term depending upon the square of upon stars at different zenith distances. The form f the bar which carries the counterpoises is such that its rigidity is variable, and this will intro-duce, for the effect of the flexure of the axis, in addition to the term depending on the cosine of the zenith distance—one depending on the square of this cosine. The amount of the error first found showed that the prism must be loose, and accord ingly we took it out, and found the transporta. tion had loosened the screws. I therefore tight sted the screws, and, upon repeating the the error was found to be reduced about one-half To test the flexure of the axis we arranged the striding spirit level so as to measure it quite approximately, and it was lound to be of a magnitude quite in accordance with the indications of the observations.

A COMPLICATION OF INSTRUMENTAL ERRORS. Further observations by reversal upon stars at various altitudes, collimation and level being acenrarely measured directly, showed me that the terms depending upon the square of the cosine of the zenith distances, due to the flexure of toprism in its cell and the want of rigidity in the arm which carried the counterpoises, is by far the most considerable term, and in order to provide well for the determination of this term I have measured the collimation carefully each night and reversed the instrument upon stars of various aiti-The means are thus provided in the final discussion of the observations eliminate the effect of all errors peculiar to the instrument. These errors will explain to you why I decided to observe more transits of stars than would otherwise have necessary. I need only add here that upon

i made observations to find accurately the value of one revolution of the micrometric screw, and also tested carefully its regularity. The error of level of the photographic felescope was always very carefully determined, as you will see when the records reach you. The measurement of this error I made with the micrometer, using the spirit level of the engineer's level only for a small amount-usually not half a division of its scale.

THE METHOD ADOFTED
you will understand clearly from the records. The azimuth of the middle vertical line of the plateholder, and also the azimuth of the plumb line where it crosses the middle horizontal line

azimuta of the middle vertical line of the plane holder, and also the azimuth of the plumb line where it crosses the middle horizontal line of the plateholder, were carefully measured each night of observation. In the case of the double image micrometer I took a large number of transits of the sun's limb to determine its zero point and the value of one revolution of the screw. The night before (the transit) had been beautifully clear. I went in person to the observatory at lour o'clock A. M. and observed for some time. I also made a final inspection to see that everything was all right. I assigned to each member the duties he was to perform, and every man was in his place long before the appointed time.

We had measured the distance between the objective and plateholder, and we were proceeding to make reversed photographs of the lines when a bank of clouds came up from the southeast and covered the sun. It began to appear hopeless for the observation of the transit.

I had arranged so as to have the contacts observed with three telescopes—viz., by myself with the five-inch equatorial; by Professor Young with the turres-inch chark telescope, and by Mr. Woodward with Prolessor Young's four-inch comet seeker, the rising clouds preventing Professor Young from using the spectroscope. The clouds were getting a little tannar and the prospect was, a little before hime o'clock, lavorable for the observation of the first contact.

JUST AS we where READY to compare caronometers it was descovered that the electric connections between the photographic house and the transit house was broxen, and frotessor Young, who had but them up, sought to find the place of the breax. But as it incked only a half hour of the first contact, it had to change the programme, and, in order to be sure and have the time of the exposure of the photographs taken samply, I sent Mr. Woodward into the photographs bear evidence of the difficulties we had to encounter. The heliostat was in charge of Professor Young, and, while he was engaged mobile to that when cours and not interiere we could direct the image almost exactly to the middle of the plate notice. On the whole, you will find the pic-tures well centred on the plate, the exceptional cases being those mentioned.

After forty-jour exposures had been thus made dense clouds obliged us to suspend operations. It remained completely overcast until near one o'clock P. M., when we were enabled to resume photographing.

It remained completely overcast until near one o'clock P. M., when we were enabled to resume photographing.

Meanwhile we had detected the place of the break in our wires (now supposed to have been made by a Chinaman with a wheelbarrow long of water passing over the wires just before we discovered the circuit broken) and repoired it, and the alternoop photographs are also recorded on the caronograph. I also continued Mr. Woodward at the record of the times, &c., and Dr. Dudgeon gave me valuable assistance in developing and fixing the photographs, which we made at average intervals of a minute and a quarter. It will be seen by comparing Mr. Woodward's record with the corresponding record by the clock or the carties accuracy, so that the forenoon times of the photographs are as reliable as if they had been also recorded on the chronograph the began thotographing in the afternoon as soon as the clouds became thin enough to enable us to see the sun, and I gave the same order as in the forenoon—to make exposures as fast as the plates could be got ready. By so doing we obtained fity-five exposures before the end of the transit. The clouds dispersed before the end of the transit. The clouds stagered before the time contact, but a dust storm was approaching it actually came an hour after the transit, and the air was yellow-timted with dust, so that long exposures had to be made.

APPEARANCE OF THE PICTURES.

an hour after the trainst), and the air was yellow-tinted with dust, so that long exposures had to be made.

The photographs are necessarily thin, but nearly all of them can be well measured. The third and fourth contacts were conserved by me with the equatorials, by Professor Yenng with the three-hach clark telescope and by Mr. Woodward with the lour-inch comet seeker. In measuring cusps I was bothered in the Iorenoon by the faintness on account of clouds and in the afternoon by the unsteadiness of the limb at times. However, I did the best I could, and succeeded in getting between thirty and forty measures.

To recapitulate them we have observed well all the contacts, and have obtained about minety photographs which can be measured. I regret that we did not have a clear cay, in which case we should alway obtained 200 zoon photographs. The observations for pesition of the pactographic telescope and all necessary preliminary observations were so carefully and repeatedly made that we have the means of getting from our photographs will te sparced in their neasurement. In accordance with your suggestion! nave divided the negatives. I have retained here, to be forwarded on a uniferent steamer, one box of enegatives, containing three sets (four each) of direct and reversible photographs, one before and two aiter the day of the transit, and thirty-cinat negatives of the transit. Those which I have are good negatives, and if the others should unfortunately belost on the way these wound give a good result for Pekin. Those which I have are good negatives, and if the others should unfortunately belost on the way these wound give a good result for Pekin. Those which I have are the day of the transit, and thirty-cinat negatives of the commander of the Pacific Mail steamship sailing directly to San Francheo, to be incode forwarded with great care by express to washington.

The other mistruments are to go home in the Lackawanna when is soon to return to the United States. Lenclose negative, through the mistruments are to go

as in the afternoon at third contact, but I did see well enough to put me on the lookout for definite phases at third contact and to show me what to expect.

Thus while the third contact was observed by me with great accuracy and under lavorable circumstances, I am satisfied that my observations of second contact are very good and to be relied upon in the discussion of all the observations. The records will give you an account of what was seen by each observer, and I now write simply to stace what I now know to be the phenomena of second when the later than the band of light between Venus and the sun's limb was reduced to about one second of arc (or perhaps 0.88.) in width, it was interrupted by flittling shadows. They began by a single one momentarily in the thinnest part of the band, then expanding as the bend became thinner and themer—not permanent, but flitting—and they appeared radial to Venus. They were independent of, and had nothing to do with the undulations of the sun's limb. The first reducing carry dark connection was 24.68, before definite casps were formed. The definition in the telescope was good, although the lime of the san was occasionally undulating. During the period of 24.68, these shadows were becoming darker and more homerous, but the line of night could be seen clear across, with simply momentary interruptions in the manner described. At the instant recorded as third contact the shadows ceased, and the line was suddenly and permanently broken and distinct class formed. They were quite sharp, and there was no appearance of a black ligament as previously described. But while the snadows had ceased and darking sharp cusps were formed the space between the cusps was evenly tinted with a grayish light, which lessed in the falled this at the time a sort of twillight, and I thought the solar corona and chrome-spicuous. I called this at the time a sort of twillight, and I thought the solar corona and chrome-spicuous. I called this at the time a sort of the infection made in the second contact, a

They would also give a joint illamination to the disk of venus as seen on the sun. The rays which would come to a locus far behind the object which would come to a locus far behind the object when the would come to a locus far behind the office of the response of the sun of this I was sure I could see on several occasions.

THEORY OF THE STRANGE APPEARANCES.

THEORY OF THE STRANGE APPEAR which would come to a locus lar behind the offered when would come to a locus lar behind the offered when would come to a locus lar behind the offered when the would come to a locus and this I was not or the Standard Parkanasces.

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THE PHENOMENON OBSERVED AND PHOTO-

GRAPHED UNDER PAVORABLE ELEMENTAL AUSPICES-NEWS FROM DESOLATION ISLAND. UNITED STATES STEAMSHIP MONONGAHELA. KERGUELEN ISLAND, South Indian Ocean, Jan. 10, 1874.)

Having received orders to find and convey home the parties who were left at Kerguelen Island by the United States steamer Swatara, during the month of September, 1874, the Monongahela, which was attached to the South Atlantic station, left the parbor of Rio Janeiro, Brazil, on the 1st day of October, 1874, and proceeded on her long cruise. It was an expedition entausiastically entered into by officers and men, though we were about entering unknown seas many thousands of miles from civilization, and having comparatively little knowledge of the dangers of the navigation, being entirely without any data or meteorological phenomena which "blaze out," as it were, the more frequented portions of the globe.

After a long and tedious voyage through the innospitable seas of the Southern Hemisphere we at last sighted the Crozet group of Islands; but, to our great disappointment, there was no American party there. We had been left under the impression that an expeditionary force was to be landed on that island; but we thought, perhapsas it afterward proved-that they had been unable to effect a landing. So the ship was turned toward Kerggelen, which place we sighted after a few days, anchoring in Christmas Harbor.

NO SIGN OF THE AMERICAN PARTY. As at the Crozet Islands so it was at Christman Harbor; where we confidently expected to find our party they were non est inventus, and it was a source of considerable annoyance and some anxiety to us, as we had not the slightest idea where they might be. Visions of serious weather and disaster to the Swatara began to arise, as she had not been seen or heard from since she left Cape Town, in August. But, trusting to luck, the sailor's "standby," and to that sweet little cherab which sits up aloit to watch over the life of poor Jack." it was decided to proceed at once along the coast and search out our friends. Accordingly, on the 9th of December, the day of the transit, we steamed out of Christmas Harpor and headed down the coast. As we rounded the southern cape of the harbor the sun zon, and, filling the whole heavens with a brilliant light, presaged a magnificent day. And so it A BRIGHT SKY.

To our enthusiastic countrymen, standing on a one point in the southern part of the island (as we afterward learned), it was indeed a "sun of Austerlitz." Not a cloud dimmed the sky, and, with anxious and beating hearts (for the

weather here is most treacherous), these gallant men, in their efforts in behalf of science, stood ready by their instruments catch the first moment of contact. It came precisely at 6h. 41m. A. M. A dark spot was seen to touch the outer rim of the sun's disk, and our astronomers knew that Venus was in a direct line between them and the great luminary. Other positions of the planet being obtained, the rate of travel was established and the deed was done.

As the planet was in transitu, PHOTOGRAPHIC VIEWS of it were taken by Professor D. R. Holmes, the chief photographer of the expedition, and his assistant, showing the relative position of the star taneous." are very exact, and show the true posttions and times of the planet in its course across

the sun's disk.

The first instant of contact was observed by Commander G. P. Ryan, chief of the expedition, through his large telescope, one before it was seen by Lieuten ant Commander Train, who had charge of the smaller instrument (by no means an

iectness of the lormer, which is of American manufacture.

We have every reason to congratulate these gentlemen, not only on the accurate and splendid instruments which they possess, but also on the said with which they possess, but also on the said with a state that, owing to the bad weather and her duties eisewhere the Swata-a was unable to remain here any length of time; so, having landed the party and their effects ou the beach, she took her departure, leaving these gentlemen, with their "household gods" scattered around them, and looking like so gods" scattered around them, and looking like so many "Maruses amid the ruins of Carinage;" leaving these generation, was an isoching like so many "Mariuses and the rains of Carinage;" but they did not remain long in this state, and, having some of the Zeal and perseverance of that old Roman hero, they soon brought "order out of chaos," and not taking off their coats, as the state of the thermometer would hardly admit of that, but, girong up their loins, they "pitched in" in true habover style, and soon the neat little Town of RAMSYLLE, began to assume a local habitation and a name," Lieutenant Commander Frain, the architect of the occasion, having the pleasure of carrying on his back bags of sand for beniging paracess nearly two

the thermometer at lorty degrees and the wind blowing the hair from your head; but notaing daunted, these gentlemen having erected their houses, tents, observatories, &c., and making a street here and a square there, soon gave an air of comfort and business-like appearance to the hitle village by the sen. It is true were no reservoirs or hydrants, nor were

discovery.

ance to the little village by the sec. It is true there were no reservoirs or hydrants, nor were there any gas lamps in this new city; but a gushing torrent of pure cold water from the distant mountains swept at its feet, supplying the absence of the former, while the unnumbered constitutions of the Southern Hemisphere, glowing with their undying brilliancy, answered in place of the latter.

POSITION OF THE OBSERVERS.

Molloy Point, upon which is situated the village of Ryansville, the point where the observing parties are stationed, is on the north side of Royal Sound and about twenty-five miles from the mouth. It is under the iee of the high range of mountains which extend along the length of the island, and is thereby protected from the strong westerly gales which blow here at times with great force. These mountains also tend to condense or dispel in a great measure the heavy masses of clouds which form on the windward side of the island. This point is one of the most favorable in the whole island or observations, and will probably be used again in 1882, when the next transit of Venus takes place.

VENUS AT THE ANTIPODES. PROFESSOR PETERS' CHEERING STORY OF THE LABORS AT QUEENSTOWN.

OURENSTOWN, OTAGO, N. Z., Dec. 11, 1874. Rear Admiral C. H. Davis, United States Navy, President of Commission on Transit of Venus:-DEAR SIR-I am very happy to report that our work, the observation of the transit of Venus, has been successfully accomplished. Our success I terfered toward the close, so that egress could not be observed. As it is, our record stands thus:-With the equatorial I observed the first exter-nal and first internal contacts, the former (as of course) uncertain, the latter with great precision, as, I believe, none of the much talked of physical phenomena presenting themselves to my eye. I took 14 measures of chord and cusps while Venus was on the limb, further 21 measures of distances of the planet from limb, and determined its anparent diameter by 10 good measures. Or photo-

of the planet from limb, and determined its apparent diameter by 10 good measures. Of photographs I find, after a careful revision and examination of the plates, made on yesterday afternoon, in all 237—viz. 175 contact pictures and 59 pictures taken while the planet was on the disk. These are not uniformly distributed over the time. The sun was out almost uninterruptedly during the first 1½ nours. Thereafter came clouds, with but small intervals of sunshine, so that the system was changed, and pictures were taken whenever there was a chance, sometimes, therefore, in quicker succession. The last picture was taken at 16 minutes before beginning of egress. And from that time on the sun was under a dense cloud, until 1 caught the first glimpse of it again, 33 seconds after the computed time of last contact when Venus and gone.

UNEXPECTED GOOD LUCK.

The American party at New Zealand may be said to have been particularly tayored by heaven, nonc of the other observers on this island have seen the least of the transit, clouds seeming to nave overhung the whole area. I received telegrams in the forenoon such as these:—"Rain at the Blud!;" "Rain at Clyde;" "Overcast at Dunedin;" "Overcast at Christohurch," &c. It seems that we escaped disappointment from being in a greater elevation above the sea. I must add, beside, that our instruments worked admirably, especially the mirror and the heliostat clockwork. No sooner did the san show a beam through a gap in the clouds than it was caught on the plate by a shouch of the spring and recorded by the chronograph. Also our other precautions (against wind, &c.) proved of the greatest usefulness, and the operations did not suffer interruption from sudden gusts of wind, nor from heating of the soil, &c. I may well make these remarks, occause the greater merit of these arrangements does not belong to me, but to my assistant astronomer, Lieutenant Bass. I am, dear sir, yours very respectfully.

VENUS IN NEW CALEDONIA. SUCCESS OF THE PRENCH SCIENTISTS-BRILLIANT

PHOTOGRAPHIC ACHIEVEMENTS-THE "BLACK DROP." . TO THE EDITOR OF THE LONDON TIMES :-

SIR-Many of your readers will no doubt be glad to learn what fortune has attended the French expedition despatched to New Caledonia to observe the transit of Venus. The success, I am sorry to say, has been partial, the first, second and fourth contacts being observed, but, owing to a cloud, not the third and most important one. The phenomena of the black drop and ligament were not seen through any of the four telescopes fitted with M. Foucault's silvered lenses; but with a fith instrument, provided with an unsilvered object glass, there was an appearance as if a figament were about to form, succeeded by a cloudiness about the point of coutact of the planetary and solar limb. The time of the second contact, obtained by means of the silvered object

not, as in the other cases, near the centre, was selected. More than two hundred photographs on silvered plates by the lodi-browne process were taken by M. Anget, by means of an object glass of considerable length of locus, during the progress of the transit and up to within eight minutes of the third contact, nearly all which pictures, from their extreme clearness of definition, will prove of the highest value in estimating the exact instants of contact in the path of the planet.

For ten days previous to the 9th of December the sky was almost continuously covered with clouds, and M. André, the director of the expedition, as well as every one esse connected with it, entertained the worst lears as regards the weather up to within three hours of the commencement of the transit.

The observations with the telescopes mentioned above appear to demonstrate the superiority of the silvered over the unsilvered object glasses for work of this kind, for with the former the distinctness was that of mathematical contact, while with the latter it was impossible to do more than fix two lastants of time between which the observer could say with certainty that the contact occurred. I remain, sir, your obedient servant,

NOUMEA, New Caledonia, Dec. 11, 1874.

HYPERBOREA.

THE BRITISH ARCTIC EXPEDITION- ITS IN-TENDED COST AND RESULT.

LONDON, Feb. 23, 1875.

Within the next three months an expedition will sail from these shores to endeavor to reach the North Pole of our earth. This expedition, to be undertaken and provided for by the government, is the result of an agitation which has been carried on by the geographers and scientific men of Great Britain since the return of Sir Leopold McClintock from his well known voyage of covery in the Fox. Oh the 23d of June, 1865. Cap-tain, now Admiral, Sherard Osborn, read before a large and enthusiastic gathering of the Geographical Society his first paper on the exploration of the North Polar regions. It was, however, no lault of the gallant Captain that the general public did not respond to the appeal. Himself an Arctic explorer, he spoke with knowledge and confidence, pointing out the reasons for undertaking Arctic discovery, explaining the direction which a Polar expedition should take with the least risk and the greatest probability of success, the mode in which such an expedition should be conducted and the scientific results likely to epsue. The proposition met with but lukewarm encouragement and it was not until seven years later, in 1872, when the gallant officer made a second effort before the same society, that the press and the public, which, during the interval, nad been familiarized with the importance of Arctic exploration, came forward in his support. A ceputation of the Royal Geographical Society, headed by its President, Sir Henry Rawlinson, waited upon the government in December and were received by Mr. Lowe and Mr. Goschen, to whom they explained their views. But a Ministry which had Mr. Lowe for its Chancellor of the Exchequer was not likely to look with any favor upon a project for spending money for scientific purposes, and in the next month Sir Henry Rawlinson was informed that the government declined to send out an Arctic expedition that year on the plea that "the public revenue had to bear the main burden of the expenses of the operations intrusted to the Challenger." The leading men among the learned and scientific bodies were not, however, to be discouraged by this rebuff. They felt that they had secured a hold upon public attention, which would indorse their efforts, and the Geographical Society united with the Royal Society in drawing up a memorandum on the scientific results to be derived from Arctic exploration and on the reasons why such researches can best be successfully accomplished by a naval expedition despatched under government auspices, and secured as far as possible from failure and disaster by careful navigation and good discipline. This memorandum was submitted to Mr. Gladstone, with a request that he would receive a deputation on the subject. But the Prime Minister wrote an unsatisfactory reply, stating vaguely that survey operations ha a stronger claim to consideration than those of

In February, 1874, the Gladstone Min'stry re-

signed, and it being considered probable that

their successors, as men of larger views, would be

more readily approached, a deputation, consisting

of Dr. Hooker, the President of the Royal Society; Sir Henry Rawlinson, President of the Royal Geo-graphical Society, and Admiral Sherard Osborn, on August 1, 1874, had an interview with Mr. Disracii on the subject of despatching an Arctic expedition in 1875. The memorandum already spoken of was submitted to the Premier, with other papers, setting forth the important scientific other papers, setting forth the important scientific and commercial results to be obtained. The details of the expedition were fully gone into, and Mr. Disraeli promised to consider the subject carefully and to give an early decision. That decision was communicated to Sir Henry Kawinson in a personal letter from the Prime Minister, dated November 17, 1874. It stated that "having carefully weighed the reasons set forth in support of the expedition and the scientific advantages to be derived from 1, 18 chances of success, as well as the importance of encouraging that spirit of maritime enterprise which has ever distinguished the English people, the expension and the scientific advantages to be derived from 1, its chances of success, as well as the importance of encouraging that spirit of maritime enterprises which has ever distinguished the English people, Her Majesty's government has determined to lose no time in organizing a suitable expedition for the purpose in view." An Arctic committee, appointed by the Lords of the Admiralty to advise them on all subjects connected with the expedition, consisting of Admiral Riebards, Admiral Sir Leopoid McClintock and Admiral Sherard Osbora, was at once organized, and under their supervision the work of preparation has been zealously pushed forward. The command of the expedition has been given to Captain George S. Nares, who was a mate on board the Resolute in the Arctic expedition of 1852-4, where he mainly distinguished himself by taking a leading part in siedge traveling. In the spring of 1853 he travelled over 655 miles in 69 days, and in 1854 he started in the intense cold of March and went over 586 miles in 69 days. Besides his Polar service captain Nares has done valuable work in surveying. From 1872 to 1874 he commanded the Ghallebger during her important scientific expedition, the operations of which have made such large admirants to our knowledge of ocean currents and temperature, and he was recalled from this command to take charge of the new Arctic expedition. The second ship to be engaged in the service will be commanded by Captain H. F. Stephenson, recently promoted out of the royal yacht. The second in c.mman; in the advance sup is Commander Albert H. Markham, an other who, since he entered the navy, in 1856, has done exceilent service, and who in 1872 hadertook a voyage to Baffin's Bay to Prince Regent's Iniet. In order to acquire experience in ice navigation, the result of which will be dound in his excellent book "A Whaling Cruise in Baffin's Bay." Lieutenant Pelham Adprired, who has-been serving as first leatenant of the Challenger, will take his piace in the advance ship. The medical staff t hew Arctic expection. The second ship to be engaged in the service will be commanded by Captain II. F. Stephenson, recently promoted out of the advance applies Commander Albest At Markham, an officer who, since he entered the navy, in 1856, has done exceient service, and who has the experience in ice navigation, the result of which will be sound in the service of the consequence of the cons

## EVERLASTING TRIAL.

The Plymouth Pastor in Training.

WHEN WILL IT ALL END?

The Plans of the De-

MRS. TILTON NOT TO TESTIFY

The public welcomes Saturday and Sunday as breathing days in the great theological and secu-

lar scandal across the river. Yesterday, according to one rumor, Mr. Beecher was blanketed and being waiked to and iro by Mr. Evarts in training for his great match of testimony, handleapped by Judge Fullerton and led by American Girl. Others say that he will not testily for a week or a fortnight. One of the counsel for the defence was questioned last Thursday as to the duration of the trial. He replied :-

"I suppose all the evidence for our side and the plaintin's rebuttal will take a month, but we shall

not consume a month with our witnesses."

On this theory the defence ought to have Mr. Beecher on the stand this week, as the rebutting evidence will take at least a fortnight, and there are yet to testify for Mr. Beecher witnesses to rebut Kate Carey and others to impeach Frank Moulton. Kate Carey will be attacked on all sides, and it is said that she may save the defence this trouble by coming forward to modify her testimony. The latter is claimed to be very probable. Meantime, the plaintiff has a lot of new witnesses. He means to impeach the credibility and general character of Assistant Pastor Halliday, of Bessie Turner and of Thomas Cooke, and to show that all this batch of witnesses have been drilled and kent in conference and paid money and supported on promises. Evidence is also to be offered that Therese Burke was spirited out of Brooklyn and out of the jurisdiction of this State. Mr. Carpenter is to be sworn. Mr. West and others are to be recalled, and the course of the defence is to be offered to show that witnesses were flattered, entreated and persuaded on various pretexts to come to the court room and impeach the plaintiff. Proceeding at the rate of four hours a day, how can this evi-

at the rate of four hours a day, how can this evidence be presented in a fortnight or three weeks? The witness Cooke, the newspaper interviewer, who remains here to give jurther testimony affecting the preparation of the West charges, says that the trial will continue until July, and that Mr. Beecher's witnesses and misself will require at least six weeks more. He said:—

THE PLANS OF THE DEFENCE

The defence propose to attack Tilton on every side of his character and make him odious in the community and country. After that is fully done they propose to take up Moniton and destroy him, root and branch, to like manner. Then they will show Mrs. Moulton's dependence upon those two and leave her without support, so that her evidence will fail to the ground between. They had proposed to impeace her credibility, also, but Mr. Beecher would not have her attacked cruelly."

As to Rev. Mr. Halinday, it appears that there is to be a front, flank and rear attack upon him to the end to damave the reputation of Plymouth through and through, and the following letter has been published:—

through and through, and the lollowing letter has been published:—

Rev Sawell. B Halliday.

Sin—it is alleged that in your cross-examination yesterday in the Beecher-Hilton case you stated "the Juvenile Guardian Society is one of the biogest humbugs that was ever put afford." As "resident of said society I brand the above assertion as untrue in every particular and malificially take, and challence your proof. Failing to produce evidence in support of your charge legal' steps will be taken to prevent your charge legal' steps will be taken to prevent your attempt to damage our society from having the effect evidently intended by you.

Neither the Rev. D. P. Robertson nor any one "wearing green speciacles" is connected with the New York Juvenile Guardian Society.

I have the honor to be, Yours, &c.,

LENSY W. BALDWIN, President.

BESSIE TURNER'S MANNER.

New York, March 29, 1876.

BESSIE TURNER'S MANNER.

Mr. Daniel Dougherty, the executor of Edwin Porrest and a leading social and forensic light of Philadelpaia, heard the whole of the testimony of Bessie Turner last Friday, and a HERALD writer interviewed him upon the matter after Court. He said:—

"I don't quite know what my judgment is. The girl's manner rather shocked me, in its cool, boid, immodest way of testifying such obscentiles so binatly. She was prepared for every question and her evidence was given rather too much parroquet fashion to convince the ear. However, the cross-examination will test that. If sac is twenty-taree years old she can expect no immunity from a rigorous examination. It was a severe story, however, and the apparent inconsequentiality of some of the details gave it an air of reality. She related that she nad followed Tilton three times with great apparent docility to near nis alleged horrible relation in a private room, and I was reminded of Othello saying:—

Still did she follow with a greedy ear, While I discoursed.

I don't know, however; the defence seems to

I don't know, however; the defence seems to me to be of admirable minuteness and industry, but of very unequal relevancy. I don't believe that over in our Quaker City any Judge would permit so muce trying of side issues. I think we have judges who would make the lawyers finish up even this case in a lortnight. I tell you, sir, the greatest and most general of modern offences in America is perjury. Our Judges almost universally admit that perjury is nearly as formidable as justice. When they are done with Tilton's general character here, and come to Mr. Beecher, this cause will arrive at where it should have remained from the outset—at the trial of the cause against the delendant for the offence charged and for the damages claimed, and for nothing else."

The friends and adherents of Mr. Beecher are in a state of great exultation at the quantity and decided one of the mud thrown over the plaintiff. The more immediate attorneys of Mr. Beecher and the Mrs. Tilton coterie are deligated with Bessie Turner's bearing and bravery. She will be sharply met at every point by Fullerton; but the plaintiff labors under a chronic want of funds to oring his witnesses to Brooklyn from such law western places as the spot where Bessie Turner went to school, and where they claim that she was a precoclous and coustant har and inventor. Mr. Tilton's nousekeeper, Old Katte, and others, will, however, relate what they know on this point with sufficient vigor, and the subject strengthens the probability that Fiorence Tilton will take the stand.

MRS. Tilkon will. Not TESTIFY. I don't know, however; the defence seems to